

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-18 and 21-25 are pending in this application. Claims 15-18 have been withdrawn from consideration. Claims 19 and 20 were previously canceled and Claim 26 is presently canceled without prejudice or disclaimer. Claims 1, 2, 8, and 11 have been amended without the introduction of any new matter.

In this last respect, amended Claim 1 is supported at page 45, lines 15-25 of the specification, while amended Claim 11 is supported in the eighth embodiment of the specification. Claims 2 and 8 have merely been rewritten in independent form.

The outstanding Action presents a rejection of Claims 1-7, 10, 11, and 12 as being unpatentable over Sakakima et al. (U.S. Patent No. 6,567,246, Sakakima) under 35 U.S.C. §103(a), a rejection of Claims 11, 13, 14, and 24-26 as being unpatentable over Gill (U.S. Patent No. 6,275,363) in view of Tan et al. (U.S. Patent No. 5,962,080, Tan) under 35 U.S.C. §103(a), and a rejection of Claim 12 as being unpatentable over Gill in view of Tan in further view of Sin et al. (U.S. Patent No. 6,353,318, Sin).

Initially, Applicants gratefully acknowledge the indication that Claims 8, 9, and 23 are only objected to as being dependent on a rejected base claim but would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claim. As Claim 8 has been so rewritten, and as Claim 9 depends on Claim 8, allowance of Claims 8 and 9 is believed to be in order.

With respect to the rejection of Claims 1-7, 10, 11, and 12 as being unpatentable over Sakakima, it is noted that one of the features recited in the present invention defined by Claim 1, and Claims 3-7 and 10 that depend thereon, is that the magnetic transition element that does not bond to oxygen is inside the layer containing the oxide as a principal component.

On the other hand, Sakakima teaches a layer 32, which is not oxidized, and a transition metal element that is completely not bonded to oxygen. Layer 31 is an oxide layer, wherein the transition metal element is completely bonded to oxygen.

Therefore, in Sakakima, the magnetic transition metal element which does not bond to oxygen is an interface between the layer 32 and the layer 31 (corresponding the layer containing the oxide as a principal component of the present invention).

Accordingly, Sakakima does not teach or suggest that the magnetic transition metal element which does not bond to oxygen is provided inside the layer containing the oxide as a principal component as Claim 1 requires.

Accordingly, Claim 1 patentably distinguishes over Sakakima so that this rejection applied to Claim 1, and Claims 3-7 and 10 that depend thereon, is believed to be improper and should be withdrawn.

With further regard to Claim 2, it is noted that Claim 2 recites that the layer containing the oxide as a principal component also contains a magnetic transition metal element of Co which does not bond to oxygen. The outstanding Action asserts that Sakakima shows the layer containing an oxide as a principal component contains a magnetic transition metal element of Co which does not bond to oxygen (citing column 6, lines 14-17 at page3 of the outstanding Action).

However, this assertion is incorrect because Sakakima teaches the magnetic films as containing MFe₂O₄ (M is at least one kind of element selected from the group consisting of Fe, Co, and Ni) as a major component (see column 6, lines 14-17 of Sakakima).

Since MFe₂O₄ (M being either Fe, Co, or Ni) is a stoichiometric composition, the element represented as M bonds to oxygen (see the enclosed copies of Handbook of Magnetism, Figs. 9.3-9.4). Please note that in Fig. 9.4, the big balls represent oxygen ions, the small white balls show positions of A which represent the positions of metal ions

surrounded by four oxygen ions, and the black small balls show the positions of B which represent positions of metal ions surrounded by six oxygen ions.

Therefore, Claim 2 also patentably distinguishes over Sakakima and the rejection of Claim 2 as being unpatentable over Sakakima is believed to also be improper and should be withdrawn.

With further regard to Claim 10, one of the features recited by Claim 10 is that an atomic composition of at least one of argon, xenon, helium, krypton and neon contained in the layer containing the oxide as the principal component is twice or more as much as the atomic composition of that in the layer which contacts the layer containing the oxide as the principal component. Sakakima does not disclose a ratio of an amount of Ar contained in the layer containing the oxide as the principal component to that in the layer which contacts the layer containing the oxide as the principal component. Therefore, Sakakima does not teach or suggest an atomic composition of at least one of argon, xenon, helium, krypton and neon contained in the layer containing the oxide as the principal component is twice or more as much as the atomic composition of that in the layer which contacts the layer containing the oxide as the principal component and Claim 10 further patentably distinguishes over Sakakima.

Turning to the rejection of Claims 11, 13, 14, and 24-26 as being unpatentable over Gill in view of Tan, it is first noted that the cancellation of Claim 26 renders this rejection thereof as being moot.

With respect to Claim 11, it is noted that this claim requires that the magnetoresistance effect element comprises a spin-valve film which includes a non-magnetic intermediate layer is made of metal. Instead of this claimed spin-valve film including a non-magnetic intermediate layer that is made of metal, Gill teaches a magnetoresistance effect element with a tunnel junction. Thus, Gill does not teach or suggest a magnetoresistance

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effect element that comprises a spin-valve film which includes a non-magnetic intermediate layer is made of metal. As Tan also does not teach or suggest a magnetoresistance effect element comprises a spin-valve film which includes a non-magnetic intermediate layer is made of metal, withdrawal of this rejection of Claim 11 and Claims 13, 14, 24, and 25 that depend thereon is also believed to be in order.

With respect to the rejection of Claim 12 over Gill in view of Tan and Sin, it is clear that Sin cures none of the above-noted Gill and/or Tan deficiencies. Accordingly, the rejection of Claim 12 is also traversed for the reasons noted above as to base Claim 11.

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CONCLUSION

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that no further issues remain outstanding in the present application, and that this application is clearly in condition for formal allowance and an early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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